

REMARKS

Applicant acknowledges receipt of the Office Action mailed on February 22, 2007. In the Office Action, the Examiner rejected claims 1 and 4-7 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Morgavi (U.S. Patent No. 6,562,413) in view of Ikemoto et al. (U.S. Publication No. 2001/0020960).

By this Amendment, Applicant amends claims 1, 4, and 5, and cancels claims 6 and 7, without prejudice or disclaimer. Claims 2 and 3 were previously canceled. Upon entry of this Amendment, claims 1, 4, and 5 will remain pending. Of these claims, claim 1 is the sole independent claim.

The originally-filed specification, claims, abstract, and drawings fully support the amendments to claims 1, 4, and 5. No new matter has been introduced.

Based on the foregoing amendments and the arguments that follow, Applicant traverses the rejections above and respectfully requests reconsideration for at least the reasons that follow.

I. 35 U.S.C. § 103(a) REJECTION

Claims 1 and 4-7 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Morgavi in view of Ikemoto et al. Applicant respectfully disagrees with the Examiner's arguments and conclusions and submits that independent claim 1 is patentably distinguishable over Morgavi and Ikemoto et al. for at least the reasons set forth below. Applicant submits that the rejections of claims 6 and 7 have been rendered moot by the cancellation of the claims, without prejudice or disclaimer.

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), the Examiner must meet three basic criteria. First, there must be some suggestion or

motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. M.P.E.P. § 2143. The analysis supporting an obviousness-type rejection “*should be made explicit*”, as it is “important to *identify a reason* that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed (emphases added). KSR International Co. v. Teleflex, Inc., No. 04-1350, slip op. at 14 (U.S. April 30, 2007). To that end, a showing of a “teaching, suggestion, or motivation” to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

Currently amended claim 1 recites, among other things, the device, “wherein the first printing device and the second printing device are selected from: a combination of the devices having the plurality of first printing heads as black printing heads for jetting the first set of image-setting ink drops, the first image-setting ink drops being image-setting black ink drops, and having the plurality of second printing heads as color printing heads for jetting the second set of image-setting ink drops, the second set of image-setting ink drops being image-setting cyan, magenta, and yellow color ink drops, and a combination of the devices having the plurality of first printing heads as color printing heads for jetting the first set of image-setting ink drops, the first set of image-setting ink drops being image-setting cyan, magenta, and yellow color ink drops, and having the plurality of second printing heads as black printing heads for jetting the

second set of image-setting ink drops, the second set of image-setting ink drops being image-setting black ink drops.”

Morgavi discloses a known technique for multicolor printing by inkjet in FIG. 2. The printing device includes “[s]everal reservoirs 21, 22, 23, and 24 containing...[a] black polymer ink and those of different colours[, which] feed at least one nozzle ejecting drops of ink...”, and “four ultraviolet lamps 25, 26, 27, and 28 for drying *each ink individually*” (emphases added). (Morgavi, col. 1, ll. 54-55 and col. 2, ll. 1-4 and 20-22).

However, as admitted by the Examiner, Morgavi, at least, does not explicitly disclose the device “wherein the plurality of first printing heads are color printing heads for jetting the first set of image-setting ink drops, the first set of image-setting ink drops being image setting cyan, magenta, and yellow color ink drops, and wherein the plurality of the second printing heads are black printing heads for jetting the second set of image-setting ink drops, the second set of image-setting ink drops being image-setting black ink drops.” (Office Action, page 4).

To cure the deficiencies of Morgavi, the Examiner alleges that Ikemoto et al. teaches “a full line print head containing a plurality of head chips” and “a printhead arrangement with cyan, yellow, and magenta printing heads being arranged before the black printing head.” (Office Action, page 5). The Examiner argues that it would have been obvious to combine such teachings with those of Morgavi to arrive at the claimed invention. Specifically, the Examiner argues that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Ikemoto et al into the invention of Morgavi” since “[t]he motivation for the

skilled artisan in doing so is to gain the benefit of providing an ink-jet printer having high resolution and image quality, low power consumption, and low cost.” (Office Action, page 5). Applicant respectfully disagrees with this overly-general line of reasoning.

However, even before turning to the obviousness of such a combination, it must be noted that even the combination of these teachings fails to teach or suggest the presently claimed image printing apparatus including a *first printing device* with a *plurality* of first printing heads, a *second printing device* with a *plurality* of second printing heads, and *first and second light radiating devices*, wherein the first light radiating device is mounted in between the first printing device and the second printing device, and wherein a second light radiating device is mounted downstream from the second printing device, *wherein the first and second printing devices are selected from: a combination of devices wherein the first printing heads are black printing heads and the second printing heads are color printing heads; and a combination of devices wherein the first printing heads are color printing heads and the second printing heads are black printing heads.*

Moreover, the combination of references fails to teach or suggest the apparatus wherein the *surfaces* of the first set of image-setting ink drops are hardened by first ultraviolet rays and the *surfaces* of the second set of image-setting ink drops are hardened by second ultraviolet rays while the first set of image-setting ink drops are *completely* hardened, with the first and second sets of image-setting ink drops including, alternatively, black or color (including cyan, magenta, *and* yellow) ink.

Therefore, neither Morgavi, nor Ikemoto et al., either alone or in combination, teaches the limitations of currently amended claim 1.

Additionally, even assuming arguendo that Morgavi, in view of Ikemoto et al., were to teach or suggest the limitations as claimed, such a combination is improper in this instance because Morgavi teaches away from the claimed invention. Specifically, Morgavi discloses a plurality of ultraviolet lamps 25, 26, 27, and 28, each arranged in between reservoirs 21, 22, 23, and 24, respectively, for “drying *each ink individually*” (emphasis added). (Morgavi, col. 2, ll. 20-22). This explicit teaching of drying each color (black, cyan, magenta, and yellow) of ink individually, specifically teaches away from the limitation of claim 1, in which ultraviolet rays from the first light radiating device “harden surfaces of the first set of image-setting ink drops” and ultraviolet rays from the second light radiating device “harden surfaces of the second set of image-setting ink drops...and...completely harden the first set of image-setting ink drops” wherein one of the first and second sets of image-setting ink drops comprises *all of the cyan, magenta, and yellow colors of ink drops, together*.

In contrast, Morgavi discloses a different ultraviolet lamp for each color of ink, with the plurality of ultraviolet lamps causing the printing machine to consume exorbitant amounts of electrical energy, enlarge the general structure of the printing machine, and increase the amount of time required for image printing. In the present invention, the entire image printing apparatus merely includes a *first light radiating device* mounted in between a first printing device and a second printing device *to harden surfaces of the first set of image-setting ink...before the second set of image-setting ink drops are jetted from the second printing device*, and a *second light radiating device* mounted downstream from the second printing device, *to harden surfaces of the second set of image-setting ink drops...and to completely harden the first set of image-setting ink*

drops previously jetted from the first printing device” for drying the black and color ink drops in two stages without resulting in the mixture of the landed black ink and the landed color ink before hardening (emphases added).

Accordingly, with respect to independent claim 1, the combination of Morgavi and Ikemoto et al. fails to teach or suggest the claimed invention, including, *inter alia*: “a *first printing device*, including a *plurality* of first printing heads...for jetting a first set of image-setting ink drops, a *second printing device*, including a *plurality* of second printing heads...for jetting a second set of image-setting ink drops, respectively, a *first light radiating device*...arranged downstream from the first printing device and upstream from the second printing device...and a *second light radiating device*...arranged downstream from the second printing device...*wherein the first printing device and the second printing device are selected from: a combination of the devices having the plurality of first printing heads as black printing heads for jetting the first set of image-setting ink drops, the first image-setting ink drops being image-setting black ink drops, and having the plurality of second printing heads as color printing heads for jetting the second set of image-setting ink drops, the second set of image-setting ink drops being image-setting cyan, magenta, and yellow color ink drops, and a combination of the devices having the plurality of first printing heads as color printing heads for jetting the first set of image-setting ink drops, the first set of image-setting ink drops being image-setting cyan, magenta, and yellow color ink drops, and having the plurality of second printing heads as black printing heads for jetting the second set of image-setting ink drops, the second set of image-setting ink drops being image-setting black ink drops” (emphases added).*

The Examiner has therefore not met at least one of the essential criteria for establishing a *prima facie* case of obviousness, wherein “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” See M.P.E.P. §§ 2142, 2143, and 2143.03.

Accordingly, independent claim 1 is patentable over Morgavi and Ikemoto et al.. Claims 4 and 5 depend from claim 1 and are allowable at least for the same reasons that claim 1 is allowable. In addition, the dependent claims may recite unique combinations that are neither taught nor suggested by the cited art, and therefore are also separately patentable.

Applicant therefore requests that the rejections of claims 1 and 4-5 under 35 U.S.C. § 103(a) be withdrawn and the claims be allowed.

II. CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Accordingly, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

The Office Action contains characterizations of the claims and the related art with which Applicant does not necessarily agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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